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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/778,103	02/07/2001	Akihisa Okumura	1035-303	7772

7590 07/23/2002

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EXAMINER

ILDEBRANDO, CHRISTINA A

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 07/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

MF-8

Office Action Summary

Application No.

09/778,103

Applicant(s)

OKUMURA ET AL.

Examiner

Christina Ildebrando

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 10-23 is/are pending in the application.
- 4a) Of the above claim(s) 1-4 and 10-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 08/973,684.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group II, claims 18-23, in Paper No. 7 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 1-4 and 10-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 7.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakatsuji et al.

Nakatsuji et al. (EP 0 624 393) discloses a catalyst and process for the reduction of nitrogen oxides and hydrocarbons from automobiles (page 1, lines 1-7 and page 5, lines 25-31). The catalyst composition comprises cerium oxide and a Group VIII metal such as iridium supported on a solid acid carrier (page 2, lines 45-50 and page 3, lines 55-58). The use of cerium oxide in combination with iridium is exemplified. Suitable solid acid supports include $\text{TiO}_2/\text{SO}_4^{2-}$ and $\text{ZrO}_2/\text{SO}_4^{2-}$ (page 3, lines 24-26). The examples

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detail contacting the exhaust gas with the catalyst at temperatures of 250°C, 300°C, 350°C, 400°C, or 450°C (page 9, lines 35-55).

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by Nakatsuji et al.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lauder in view of Shigeru et al.

Lauder (US 4,049,583) discloses a catalyst composition and process for the purification of exhaust gases from internal combustion engines (column 1, lines 15-21). The catalyst composition comprises metal oxide compounds of the type $[A^{1-x}A^2][B^{1-y}Me_y]O_3$ (column 4, lines 15-20), where "Me" can be iridium (column 4, lines 28-30), "A" can be cesium, rubidium, potassium, sodium, barium or silver, or rare earth metal oxides (column 4, line 65 – column 5, line 17), and "B" can be manganese, calcium, strontium, chromium, magnesium, iron, cobalt, nickel, or copper (column 5, lines 17-42). Specific examples of suitable compounds falling within the compositions instantly claimed can be found at column 8, line 50, column 9, lines 4, 7, 10, 19, and 20, and column 10, lines 29 and 31. The reference teaches that the catalyst composition may be

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supported on refractory inorganic oxides such as silica, alumina, titania, and zirconia (column 12, lines 45-55). The reference teaches that the catalyst will catalyze the oxidation of hydrocarbons and carbon monoxide as well as the reaction between nitrogen oxide and carbon monoxide to give nitrogen and carbon dioxide (column 13, lines 44-69). The examples detail the use of temperatures falling within the ranges instantly claimed.

The reference does not disclose that the catalyst contains sulfur.

Shigeru et al. (JP 7-80315) discloses a catalyst for the purification of exhaust gas comprising iridium supported on a carrier including alumina, silica, titania, zirconia, SO_4/ZrO_2 , $\text{SO}_4/\text{ZrO}_2.\text{TiO}_2$, $\text{SO}_4/\text{ZrO}_2.\text{Al}_2\text{O}_3$ (Abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the invention of Lauder in light of the disclosure of Shigeru et al. Shigeru et al. teaches the suitability of sulfated supports as carriers for catalysts in the purification of exhaust gases and further teaches the equivalence of these sulfates supports to the alumina, zirconia, and silica supports taught by Lauder. Because of the art recognized functional equivalence of the sulfated supports taught by Shigeru et al. to the supports taught by Lauder as carriers for catalysts useful in the purification of exhaust gases, it would have been obvious to one of ordinary skill to have substituted one known component for the other in the catalyst taught by Lauder.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Ildebrando whose telephone number is (703) 305-0469. The examiner can normally be reached on Monday-Friday, 7:30-5, with Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (703) 308-3837. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

CAI
July 15, 2002

Wayne A. Lange
Wayne A. Lange
Primary Examiner
EAY 1754